



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/471,160	12/23/1999	SATOSHI KOKUBO	35.C14155	7094

5514 7590 11/17/2004

FITZPATRICK CELLA HARPER & SCINTO  
30 ROCKEFELLER PLAZA  
NEW YORK, NY 10112

EXAMINER
----------

MARKHAM, WESLEY D

ART UNIT	PAPER NUMBER
----------	--------------

1762

DATE MAILED: 11/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/471,160

Applicant(s)

KOKUBO ET AL.

Examiner

Wesley D Markham

Art Unit

1762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,4 and 6-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4 and 6-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 December 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Response to Amendment*

1. Acknowledgement is made of the applicant's response filed on 8/20/2004, in which Claims 1 and 8 were amended. **Claims 1, 2, 4, and 6 – 8** are currently pending in U.S. Application Serial No. 09/471,160, and an Office Action on the merits follows.

### *Drawings*

2. The four (4) sheets of formal drawings filed by the applicant on 12/23/1999 are accepted by the examiner.

### *Claim Rejections - 35 USC § 112*

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. The rejections of Claims 1, 2, 4, and 6 – 8 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement, set forth in paragraph 7 of the previous Office Action, and under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, set forth in paragraph 10 of the previous Office Action, are withdrawn in light of the applicant's amendments to independent

Claims 1 and 8 that removed the language drawn to a "coating liquid supply port" and a "rinsing liquid supply port" from the claims.

### ***Claim Objections***

5. Claims 2 and 6 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Specifically, Claim 2 requires that the rinsing liquid be supplied "trace by trace or intermittently to the coating head", and Claim 6 requires that, when the supply of the coating liquid is stopped, the rinsing liquid be supplied "to the coating head periodically". However, amended independent Claim 1 (from which Claims 2 and 6 depend) already requires that, "when the supply of the coating liquid is stopped, the rinsing liquid is supplied intermittently to the coating head". Since "intermittently", as recited in Claim 1, is essentially a synonym for "trace by trace" or "periodically", as recited in Claims 2 and 6, Claims 2 and 6 fail to further limit the subject matter of previous Claim 1.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
8. Claims 1, 2, and 6 – 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Potjer et al. (USPN 5,851,566) in view of Poag et al. (USPN 5,958,517).
9. Regarding independent **Claims 1 and 8**, Potjer et al. teaches a rinsing / coating method of ejecting a coating liquid over the surface of a member to be coated (e.g., a moving sheet or web (Col.1, lines 4 – 6)) from an elongated, narrow coating orifice / slot (i.e., a slit (Figures 3, 4, and 9, Abstract, and Col.4, lines 31 – 33)) formed at an applicator die “50” (i.e., a coating head (Figures 3, 4, and 9, and Col.4, lines 27 – 35)) and thus forming a coated layer thereon, the method comprising the steps of rinsing an inside of the slit (i.e., manifolds “72” and/or “74”) by stopping a supply of the coating liquid from a coating liquid supply path to the coating head after ejecting the coating liquid, and supplying a rinsing liquid from a rinsing liquid supply path extending to the coating head to rinse the inside of the slit (Figure 9, Col.7, lines 35

– 67, and Col.8, lines 1 – 17). Additionally, the coating liquid supply path is different and separate from the rinsing liquid supply path, as required by Claims 1 and 8 (see Figure 9 of Potjer et al. and the corresponding description, in which it is clear that the rinsing liquid is supplied from source “134” along a path that passes through valves “138” and into orifices “69” and/or “70” in the coating head, and the coating liquid is supplied from a different source “132” along a different path that passes through valves “136” and into orifices “69” and/or “70”). In this case, the “coating liquid supply path” is the path that travels from source “132” through valve “136” and into the coating head (i.e., the coating head is connected to the coating liquid supply path), while the “rinsing liquid supply path” is the path that travels from source “134” through valve “138” and into the coating head. Thus, the paths are “different” and “separated”, as required by the applicant’s claims. Regarding **Claim 2** (which depends from Claim 1), Potjer et al. also teaches supplying the rinsing liquid trace by trace or intermittently to the coating head. Specifically, Potjer et al. teaches starting and then stopping a flow of cleaning solution to the coating head in order to clean manifold “72” (i.e., the manifold associated with the first coating liquid), and then repeating these steps in order to clean manifold “74” (i.e., the manifold associated with the second coating liquid) once one desires to switch back to using the first coating liquid (Col.8, lines 4 – 17). This sequence of starting / stopping / starting, etc. the flow of cleaning solution is equivalent to supplying the cleaning (i.e., rinsing) liquid intermittently to the coating head as required by Claim 2. Regarding **Claims 1, 2, and 6 - 8**, Potjer et al. does not explicitly teach that, when the supply of the

coating liquid is stopped, the rinsing liquid (i.e., the cleaning liquid) is supplied to the coating head periodically / intermittently. Specifically, Potjer et al. is silent as to whether the cleaning liquid is supplied periodically / intermittently or continuously during the time period(s) in which the supply of coating liquid is stopped. However, it is the purpose of the cleaning liquid of Potjer et al. to clean and remove coating liquid from the inside of the applicator die (i.e., the coating head) (Col.8, lines 4 – 6). Poag et al. teaches that, in the art of supplying a cleaning fluid to a coating liquid delivery orifice in order to clean the orifice (i.e., an orifice cleaning process analogous to that taught by Potjer et al.) (Col.4, lines 42 – 60), it was known at the time of the applicant's invention to pulse the flow of cleaning fluid by opening and closing the cleaning fluid valve (i.e., to periodically supply the rinsing liquid) to provide cleaning agitation and facilitate the cleaning of surfaces (Col.6, lines 51 – 54). Therefore, it would have been obvious to one of ordinary skill in the art to periodically supply (i.e., pulse) the cleaning liquid of Potjer et al. to the coating head when the supply of coating liquid is stopped with the reasonable expectation of successfully and advantageously improving the efficiency of the cleaning process. Regarding **Claim 7**, Potjer et al. does not explicitly teach that the rinsing liquid (i.e., the cleaning liquid) is a solvent of the coating liquid. Specifically, Potjer et al. is silent as to the nature of the cleaning liquid. However, Poag et al. teaches that, in the art of supplying a cleaning fluid to a coating liquid delivery orifice in order to clean the orifice (i.e., an orifice cleaning process analogous to that taught by Potjer et al.) (Col.4, lines 42 – 60), it was known at the time of the applicant's invention to utilize a

solvent of the coating liquid as the cleaning fluid (Col.1, lines 45 – 46, Col.2, lines 2 – 5, and Col.4, lines 50 – 60). It would have been obvious to one of ordinary skill in the art to utilize a solvent of the coating liquid of Potjer et al. as the cleaning liquid in Potjer et al. with the reasonable expectation of (1) success, as Poag et al. teaches that such a process can be successfully performed, and (2) obtaining the benefits of using a solvent of the coating liquid as the cleaning liquid, such as the ability to dissolve any dry or solidified coating material present at the coating head. This benefit is clearly applicable to the coating / cleaning process of Potjer et al. and would have been readily recognized by one of ordinary skill in the art.

10. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Potjer et al. (USPN 5,851,566) in view of Poag et al., in further view of the applicant's admitted prior art (AAPA).

11. In the alternative to the reasoning presented above, the combination of Potjer et al. and Poag et al. teaches all the limitations of **Claim 7** as set forth above in paragraph 9, except for a method wherein the rinsing liquid (i.e., the cleaning liquid) is a solvent of the coating liquid. Specifically, Potjer et al. is silent as to the nature of the cleaning liquid. However, the AAPA teaches that it was known in the art at the time of the applicant's invention to utilize a solvent of the coating liquid as the rinsing (i.e., cleaning) liquid in a coating head cleaning process (i.e., a process analogous to that of Potjer et al.'s) (page 4, lines 10 – 11 of the applicant's specification). It would have been obvious to one of ordinary skill in the art to utilize a solvent of the coating liquid



of Potjer et al. as the cleaning liquid in Potjer et al. with the reasonable expectation of (1) success, as the AAPA teaches that such a process can be successfully performed, and (2) obtaining the benefits of using a solvent of the coating liquid as the cleaning liquid, such as the ability to dissolve any dry or solidified coating material present at the coating head. This benefit is clearly applicable to the coating / cleaning process of Potjer et al. and would have been readily recognized by one of ordinary skill in the art.

12. Claims 1, 2, and 6 – 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over the applicant's admitted prior art (AAPA) in view of Asahi Glass Co (JP 10-282329 A), in further view of Poag et al.
13. Regarding independent **Claims 1 and 8**, the AAPA teaches a rinsing / coating method of ejecting a coating liquid (i.e., from a coating liquid tank "11") over the surface of a member to be coated "7" from a slit "54" formed at a coating head "5" and thus forming a coated layer "6" thereon, the method comprising the steps of rinsing an inside of the slit "54" by stopping a supply of the coating liquid from a coating liquid supply path to the coating head after ejecting the coating liquid, and supplying a rinsing liquid from a rinsing liquid supply path extending to the coating head (Figure 4 and page 4, lines 6 – 24 of the applicant's specification). Specifically, the AAPA teaches that, in a prior art slit coating device, when the stop time elongates (i.e., when the coating liquid is stopped from being supplied to the coating head), a rinsing liquid is flowed from a rinsing liquid supply circuit to rinse the tip

area of the coating head and the slit area "54", which is equivalent to the inside of the slit (see Figure 4). However, the AAPA does not explicitly teach that the coating liquid supply path connected to the coating head is "different" and "separated" from the rinsing liquid supply path extending to the coating head. Specifically, in the AAPA, the rinsing liquid and the coating liquid flow to the slit / coating head through the same circuit / path (page 4, lines 14 – 20 of the applicant's specification). As such, the rinsing liquid supply path and the coating liquid supply path of the AAPA are essentially the same path (i.e., are not "different" or "separated"). Asahi Glass Co teaches a similar method of manufacturing a color filter by coating a substrate by supplying an ink (i.e., a coating liquid) to a coating head and, when cleaning is desired, supplying a washing / rinsing liquid to the coating head to remove fouling that cannot be removed by washing from the outside of the coating head (Abstract). In addition, Asahi Glass Co teaches that the coating liquid supply path is different and separated from the rinsing liquid supply path (see, for example, Figure 1, in which the coating liquid travels along a path from a coating source "2", through switching valve "4", to coating head "1", and the washing liquid travels along a different path from a washing source "3", through switching valve "4", to coating head "1"; also see paragraph [0026]). By using this method, a long, stable discharge is ensured, and color filters can be produced in a highly productive manner (Abstract). It would have been obvious to one of ordinary skill in the art to utilize different, separated paths for the coating liquid and the rinsing liquid, as taught by Asahi Glass Co, in the process of the AAPA instead of using the same path with the

reasonable expectation of obtaining the following benefits: (1) simplifying the process due to the relative ease of either supplying a rinsing liquid or a coating liquid from different sources as the situation demands (as taught by Asahi Glass Co), as opposed to having to switch-out the rinsing liquid and coating liquid sources each time rinsing is desired (as suggested by the AAPA), and (2) providing a coating process that achieves a stable discharge over a long period of time, thereby increasing productivity. Regarding **Claim 2**, the combination of the AAPA and Asahi Glass Co does not explicitly teach a method wherein the rinsing liquid is supplied trace by trace or intermittently to the coating head. However, the AAPA does teach that the rinsing liquid is flowed when the "stop time" (i.e., the time during which the coating liquid is not supplied) elongates. The coating liquid is replaced by this rinsing liquid, and then the rinsing liquid is replaced by the coating liquid (page 4, lines 9 – 20 of the applicant's specification). In other words, the rinsing liquid used in the AAPA does not flow *in perpetuity*. Therefore, it would have been obvious to one of ordinary skill in the art to supply the rinsing liquid to the coating head during every period of elongated stop time, or in other words, between the time periods during which the slit coater is being used for coating, with the reasonable expectation of successfully and advantageously preventing the coating liquid from being solidified at the tip of the coating head after each and every time the slit coater is utilized for coating. These repeated rinsing liquid supplying steps are equivalent to supplying the rinsing liquid intermittently as required by Claim 2. Regarding **Claim 7** (which depends from Claim 1), the AAPA also teaches that the rinsing liquid is a solvent of

the coating liquid (page 4, lines 10 – 11 of the applicant's specification). Regarding **Claims 1, 2, and 6 – 8**, the combination of the AAPA and Asahi Glass Co does not explicitly teach that the rinsing liquid is supplied trace by trace or intermittently to the coating head (Claim 2), or more specifically, a method wherein when the supply of the coating liquid is stopped, the rinsing liquid is supplied to the coating head periodically / intermittently (Claim 6). The AAPA is silent as to whether the rinsing liquid is supplied periodically / intermittently or continuously during the time period(s) in which the supply of coating liquid is stopped. However, it is the purpose of the rinsing liquid of the AAPA to prevent the coating liquid from being solidified at the tip / slit of the coating head (page 4, lines 6 – 12 of the applicant's specification). Poag et al. teaches that, in the art of supplying a cleaning fluid to a coating liquid delivery orifice in order to prevent the coating liquid from contaminating the orifice (i.e., an orifice cleaning process analogous to that taught by the AAPA) (Col.4, lines 42 – 60), it was known at the time of the applicant's invention to pulse the flow of cleaning fluid by opening and closing the cleaning fluid valve (i.e., to periodically supply the rinsing liquid) to provide cleaning agitation and facilitate the cleaning of surfaces (Col.6, lines 51 – 54). Therefore, it would have been obvious to one of ordinary skill in the art to periodically supply (i.e., pulse) the rinsing liquid of the combination of the AAPA and Asahi Glass Co to the coating head when the supply of coating liquid is stopped with the reasonable expectation of successfully and advantageously improving the cleaning efficiency of the rinsing process.

14. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iwata et al.

(USPN 5,817,441) in view of the combination of the applicant's admitted prior art (AAPA), Asahi Glass Co (JP 10-282329 A), and Poag et al.

15. Regarding **Claim 4**, Iwata et al. teaches a method of manufacturing a color filter substrate, the method comprising the steps of coating a photosensitive resinous composition over a substrate by a die coating method, obtaining a black matrix pattern by forming a pattern on the photosensitive resinous composition, and applying a coloring ink so as to fill in the black matrix pattern gap (Abstract, Figures 1A – 1E, Col.5, lines 25 – 67, and Col.6, lines 1 – 9). Iwata et al. does not teach the specifics of the die coating method used to coat the photosensitive resinous composition over a substrate (i.e., that the coating is performed using the method of Claim 1). However, the combination of the AAPA, Asahi Glass Co, and Poag et al. teaches all the specifics of the slit (i.e., die) coating method recited by the applicant in Claim 1 (see paragraph 13 above). The AAPA also teaches that such a slit coating method is advantageously used to deposit a photosensitive resin in the production of a color filter (i.e., the application taught by Iwata et al.) (page 3, lines 11 – 18 of the applicant's specification). It would have been obvious to one of ordinary skill in the art to utilize the slit coating / rinsing method as claimed by the applicant in Claim 1 and taught by the combination of the AAPA, Asahi Glass Co, and Poag et al. to deposit the photosensitive resinous composition of Iwata et al. with the reasonable expectation of (1) success, as both Iwata et al. and the AAPA teach that such a photosensitive resinous composition can successfully be

deposited by slit / die coating, and (2) obtaining the benefits of using the slit coating / rinsing process taught by the combination of the AAPA, Asahi Glass Co, and Poag et al., such as preventing coating liquid from being solidified at the tip of the coating head.

16. Claims 1, 2, and 6 – 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oomori et al. (USPN 5,456,755) in view of Ide et al. (JP 09-141178 A), in further view of Poag et al.
17. Regarding independent **Claims 1 and 8**, Oomori et al. teaches a coating method of ejecting a coating liquid over the surface of a member to be coated from a spray gun “3a” (i.e., a coating head) and thus forming a coated layer thereon (Claim 1) / rinsing a spray gun “3a” (i.e., a coating head) having an opening for ejecting a coating liquid (Claim 8) (Figure 7, Col.2, lines 36 – 45, Col.3, lines 20 – 35, Col.4, lines 18 – 60, Col.9, lines 50 – 67, Col.10, lines 1 – 18), the method comprising the steps of stopping a supply of coating liquid from a coating liquid supply path (i.e., paths “14a” – “14c” in Figure 7) connected to the coating head “3a” after ejecting the coating liquid, and rinsing an inside of the coating head “3a” by supplying a rinsing liquid from a rinsing liquid supply path (i.e., path “14d”, extending from cleaning fluid container “9a” to coating head “3a”) extending to the coating head, wherein the coating liquid supply path is different and separated from the rinsing liquid supply path, and wherein the coating head is connected to the coating liquid supply path, a coating liquid supply port (e.g., the connection between coating liquid supply paths

"14a", "14b", and "14c" and the spray gun "3a") for supplying a coating liquid and a rinsing liquid supply port (e.g., the connection between rinsing liquid supply path "14d" and the spray gun "3a") for supplying the rinsing liquid are provided, and the coating liquid supply port and the rinsing liquid supply port are different (Figure 7, Col.2, lines 36 – 45, Col.3, lines 20 – 35, Col.4, lines 18 – 60, Col.7, lines 58 – 67, Col.8, lines 1 – 33, Col.9, lines 1 – 12 and 50 – 67, Col.10, lines 1 – 18). Oomori et al. does not explicitly teach that the orifice in the spray gun "3a" (i.e., the coating liquid and rinsing liquid discharge opening whose inside is rinsed / cleaned) is a slit. Specifically, Oomori et al. is silent regarding the shape of the spray gun coating / cleaning liquid discharge opening(s). Ide et al. teaches that, in the art of spraying a treatment liquid onto a moving substrate surface, using a slit-shaped nozzle is advantageous because the liquid can be sprayed evenly to the entire width of the substrate, thereby providing an even surface treatment (Abstract). Therefore, it would have been obvious to one of ordinary skill in the art to utilize slit-shaped orifices in the spray gun "3a" (i.e., the coating head) of Oomori et al. with the reasonable expectation of successfully and advantageously evenly spraying the entire substrate(s), thereby providing an even surface treatment. Regarding **Claims 1, 2, and 6 – 8**, the combination of Oomori et al. and Ide et al. does not explicitly teach that the rinsing liquid is supplied trace by trace or intermittently to the coating head (Claim 2), or more specifically, a method wherein when the supply of the coating liquid is stopped, the rinsing liquid is supplied to the coating head periodically / intermittently (Claims 1, 6, and 8). Oomori et al. is silent as to whether

the rinsing liquid is supplied periodically / intermittently or continuously during the time period(s) in which the supply of coating liquid is stopped. However, it is the purpose of the rinsing liquid of the Oomori et al. to clean the interior of the spray gun (Col.10, lines 7 – 17). Poag et al. teaches that, in the art of supplying a cleaning fluid to a coating liquid delivery orifice in order to prevent the coating liquid from contaminating the orifice (i.e., a cleaning process analogous to that taught by Oomori et al.) (Col.4, lines 42 – 60), it was known at the time of the applicant's invention to pulse the flow of cleaning fluid by opening and closing the cleaning fluid valve (i.e., to periodically supply the rinsing liquid) to provide cleaning agitation and facilitate the cleaning of surfaces (Col.6, lines 51 – 54). Therefore, it would have been obvious to one of ordinary skill in the art to periodically supply (i.e., pulse) the rinsing liquid of the combination of the Oomori et al. and Ide et al. to the coating head when the supply of coating liquid is stopped with the reasonable expectation of successfully and advantageously improving the cleaning efficiency of the rinsing process. Regarding **Claim 7**, the combination of Oomori et al., Ide et al., and Poag et al. also teaches that the rinsing liquid (i.e., the cleaning liquid) is a solvent of the coating liquid (i.e., the thinned paint taught by Oomori et al.). Specifically, Oomori et al. is silent as to the nature of the cleaning liquid / fluid. However, Poag et al. teaches that, in the art of supplying a cleaning fluid to a coating liquid delivery orifice in order to clean the orifice (i.e., a cleaning process analogous to that taught by Oomori et al.) (Col.4, lines 42 – 60), it was known at the time of the applicant's invention to utilize a solvent of the coating liquid as the cleaning fluid (Col.1, lines 45



– 46, Col.2, lines 2 – 5, and Col.4, lines 50 – 60). It would have been obvious to one of ordinary skill in the art to utilize a solvent of the coating liquid of Oomori et al. (e.g., the solvent used to thin the paint coating(s) – Col.8, lines 1 – 12, and Col.9, lines 1 – 11 of Oomori et al.) as the cleaning liquid in Oomori et al. with the reasonable expectation of (1) success, as Poag et al. teaches that such a process can be successfully performed, and (2) obtaining the benefits of using a solvent of the coating liquid as the cleaning liquid, such as the ability to dissolve any dry or solidified coating material / paint present at the coating head. This benefit is clearly applicable to the coating / cleaning process of Oomori et al. and would have been readily recognized by one of ordinary skill in the art.

### ***Response to Arguments***

18. Applicant's arguments filed on 8/20/2004 have been fully considered but they are not persuasive.
19. First, the applicant argues that the coating liquid supply path and rinsing liquid supply path in Potjer are not "separated". In response, this argument is not convincing. Specifically, the coating liquid supply path is different and separate from the rinsing liquid supply path in Potjer, as required by Claims 1 and 8 (see Figure 9 of Potjer et al. and the corresponding description, in which it is clear that the rinsing liquid is supplied from source "134" along a path that passes through valves "138" and into orifices "69" and/or "70" in the coating head, and the coating liquid is supplied from a different source "132" along a different, at least partially separated

path that passes through valves "136" and into orifices "69" and/or "70"). Importantly, please note that the claims do not require that the two paths be completely separated / mutually exclusive. See, for example, paragraph [0013] of the applicant's specification, in which the applicant clearly states that the rinsing liquid path can be partially separated from the coating liquid path according to the present invention.

20. Second, the applicant makes various arguments against the references individually (e.g., the AAPA does not teach intermittently supplying the rinsing liquid, Asahi does not teach intermittently supplying the rinsing liquid, Oomori does not teach intermittently supplying the rinsing liquid or a slit orifice, and Ide (while teaching a slit orifice) does not teach intermittently supplying the rinsing liquid). In response to applicant's arguments against the references individually, one cannot show non-obviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

21. Third, the applicant argues that Poag does not teach or suggest that, when the supply of a coating liquid is stopped, a rinsing liquid is intermittently supplied to a coating head. In response, this argument is not convincing because Poag does teach such a feature. Specifically, Poag teaches that, during periods of dormancy, a coating material (SOG) dries within the coating head (e.g., nozzle "18"). During these periods of time, the coating material supply line is closed off, and a cleaning fluid (i.e., a "rinsing liquid") is supplied to the coating head to clean the coating head (Col.4, lines 41 – 59). This cleaning fluid supply is pulsed by the opening and closing

of a valve in the cleaning fluid supply line (i.e., the cleaning fluid is supplied to the coating head periodically / trace by trace / intermittently while the supply of a coating liquid is stopped), thereby providing cleaning agitation to facilitate the cleaning of the surfaces (Col.6, lines 48 – 54).

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office Action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wesley D Markham whose telephone number is (571) 272-1422. The examiner can normally be reached on Monday - Friday, 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on (571) 272-1415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Wesley D Markham  
Examiner  
Art Unit 1762

  
WDM

  
**SHRIVE P. BECK**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 1700**